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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,663	07/02/2003	Xiang Dai	200308566-1	5441
22879	7590	08/08/2005	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			MITCHELL, JAMES M	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/612,663

Applicant(s)

DAI ET AL.

Examiner

James M. Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8,10,13-17,20,21,23 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8,10,13-17,20,21,23 and 25-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This office action is in response to applicant's request for continued examination filed May 19, 2005.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 10, 13-17, 20, 21, 23 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang et al. (U.S. 2004/0036162).

Chuang (Fig. 5, 7, 10A,B) discloses:

(cl. 8, 15-17, 26, 27) an electronic component system comprising: a printed circuit board (570, 710, 770); an integrated circuit package including a substrate (700) having a solder column array/means for electrically connecting (320, 520, 720) connecting the integrated circuit package directly to the printed circuit board and a lid/ second means (750), the lid including an extended portion that extends directly from the substrate outwardly over an edge of the substrate; a plurality of supports/support means/shim (760) with one support disposed at each corner of the integrated circuit package underneath the lid of the integrated circuit package (Fig. 5), and each support sized and shaped to enable a gap between the extended portion of the lid of the integrated circuit package and the

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supports in a first assembled state of the system (i.e. when screw contacts motherboard, 770), and to enable contact between the extended portion of the lid of the integrated circuit package and the supports without the gap in a second assembled state of the systems (i.e. when screw fully in motherboard, 770; Fig. 5), and wherein each support includes a body, the support sized and shaped to cause a portion of the body to be underneath and in contact with the extended portion of the lid in the second assembled state of the system (Fig. 5), the body including a pair of wings (Fig. 10A) extending from the body to be substantially perpendicular to each other for contacting the edges of the substrate of the integrated circuit package and the body sized and shaped to extend outwardly in a direction centrally opposite from the wings to be exposed relative to and not in contact with the extended portion of the lid, a compressive force mechanism/ means for applying loads/ fastener (780) configured to apply a compressive force on the integrated circuit package against the printed circuit board in both the first assembled state of the system and the second assembled state of the system, with the compressive force translated from the integrated circuit package to the printed circuit board through only the solder column array in the first assembled state of the system and translated from the integrated circuit package to the printed circuit board through both the solder column array and the supports via the extended portion of the lid in the second assembled state of the system, and a heat sink (550) mounted on top of the lid (i.e. integral) of the integrated circuit package;

(cl. 13, 20) with body having detent (Fig. 10B);

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(cl. 14) with support material having CTE substantially same as substrate and solder (Par. 0028);

cl. 23) with supports mechanically fastened to board without adhesive (i.e. by screw, 780);

(cont. cl. 28) an single band sized and shape to surround and contact supports (support can form "ring"; Par. 0025).

Chuang does not appear to show that the body having detent or including a pair of wings extending from the body to be substantially perpendicular to each other for contacting the edges of the substrate of the integrated circuit package and the body sized and shaped to extend outwardly in a direction centrally opposite from the wings to be exposed relative to and not in contact with the extended portion of the lid.

Furthermore with respect to the support having wings or detent, in any case since applicant has not disclosed that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical<sup>1</sup>. Thus, the body having wings would have been obvious, since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220

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<sup>1</sup> Admits that support is not limited in shape (Specification Page 5, Lines 30)

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USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984);

In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) .

With respect to the process limitation of claims 8, 10, 26 that the heat sink is mounted to the lid or that " ...solder..a second height...the second assembled state<sup>2</sup>..." the claimed is the same or obvious from the prior art structure, *infra*. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

With respect to the sink and lid being separable, I would have been obvious since it has been held that "that the use of a one piece construction instead of the structure disclosed [in the prior art (*separable pieces connected together, emphasis mine*)] would be merely a matter of obvious engineering choice." In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping means, whereas the brake disc and clamp of the prior art comprise several parts

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<sup>2</sup> Furthermore, because this is a product claim, there is no affirmative limitation that imparts a structural limitation that the package is in a second assembled state, as such, limitations regarding the second state (i.e. solder height less..) does not impart patentability.

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rigidly secured together as a single unit); see also In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961)

With respect claim 21, the fastener going through the support would have been obvious since it would not have modified the operation of the device (i.e., fastening package). See In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device).

Claims 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang et al. (U.S. 2004/0036162) as applied to claims 8 and 28 and further in combination with Verma et al. (U.S. 6,407,450).

Chuang does not appear to show its semiconductor coupled to a processor/ computer.

17. Verma teaches forming a computer system with its semiconductor package and processor (Col. 3, Lines 9-18).

18. It would have been obvious to one of ordinary skill in the art to incorporate the semiconductor package of Chuang in a computer system in order to provide a processor, in order to provide a wide variety of applications, such as computer networking as taught by Verma (Col. 3, Lines 15-18).

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***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. the prior art show examples of various shapes/types of compressive supports.

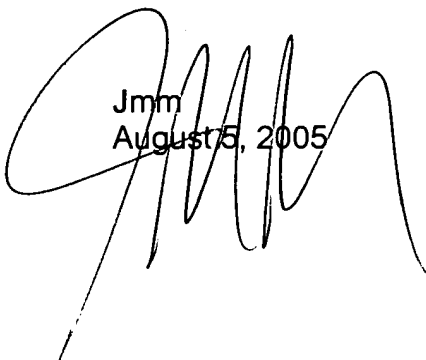
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jmm  
August 5, 2005



LAURA M. SCHILLINGER  
PRIMARY EXAMINER